

duct, and when this current is impeded markedly white leg resulted. The case of the absorption of a poison into the cellular tissue (which, according to some, controverts White's opinion) was examined, and it appeared that this might or might not be followed by phlegmasia dolens, according as the obstruction in the lymphatics affected the main current or merely some minor channels (the latter being the rule); the swelling being modified in severe cases, as before observed, by the relative action of the septic blood state and tissues. Cases were quoted to prove that lymphatic obstruction is sufficient, and alone necessary, to give rise to phlegmasia dolens. The paper concluded with the following summary:

1. Phlegmasia dolens is a local disease.
2. No general symptoms need be present (implying absence of blood-poison).
3. Phlebitis, however produced, cannot give rise to phlegmasia dolens, but œdema only.
4. Phlegmasia dolens may occur in, but forms no necessary part of, blood-poisoning (such as tends to phlebitis), but is modified thereby frequently; and any tissue conditions over and beyond the presence of fibrinous serosity, and the consequent hypertrophic state of the areolar tissue, are in nowise essential components of phlegmasia dolens, but common alike to very many different "blood" diseases.
5. Obstruction to the main lymphatic channels alone is capable of giving rise to white leg, and acts by preventing the removal of the lymph from the affected limb.
6. The obstruction may be the result of (a) extrinsic pressure; (b) thrombosis due to sudden (compensatory) absorption of vitiated fluid after sudden loss of any kind; (c) inflammatory changes in the vessels themselves (rare).
7. The effect of the action of venous obstruction upon the phlegmasia dolens is an intensification of the general swelling, and the presence of œdema during the subsidence of the enlargement of the limb.

Lastly, a frequent, but unrecognized, source of blood-vitiation was alluded to, namely, in cases where large tracts of cellular tissue were diseased—as in erysipelas, sloughing, cancerous, phthisical, and dysenteric ulcerations, and the like—the lymphatics, charged with *effete* matter, and an excessive number of imperfectly-developed pale cells, formed in their glandular part, poured their contents into the venous system from the thoracic duct; and this might be a cause of thrombosis at the right side of the heart and in the vessels leading to the lung.—*Med. Times and Gaz.*, July 12, 1862.

HYGIENE.

48. *Influence of Railway Travelling on Public Health.*—The Nos. of the *Lancet* for Jan. 4, 11, 18, and 25, Feb. 1 and 8, and March 8, contain an elaborate report of a commission appointed to investigate this subject. It will be seen from the following concluding paragraphs that they consider its influence to be unsavourable:—

"The efficiency of the rapid concussions incidental to railway travelling in developing or aggravating epilepsy, chronic spasm, cerebral softening, and spinal softening, has been studied, not by the light of vague conjecture, but upon the authority of strictly-observed cases in the practice of men such as Sir Ranald Martin, Dr. Brown-Séquard, Dr. Radcliffe, and others. The particular influence of cold and draught has been brought out prominently by Dr. Williams; while this has been placed in necessary juxtaposition with the exact inquiries as to ventilation and relative purity of the air in railway carriages by Dr. Angus Smith. The mischief following from undue retention of the secretions is sufficiently and practically illustrated in the case by Mr. Hilton. The nature of the impressions so well studied by Sir David Brewster has been traced to its pathological consequences by Mr. White Cooper. Dr. Fuller's ingenious observations on the part played by the auditory nerve in conveying to the brain strong and incessantly repeated impressions of sound, are of a practical and suggestive character. This is, no doubt, one cause of the peculiar effects of continued railway travelling, which had not been well known, and of which the mischief is preventable. The almost certainty with which a long railway journey will, in some pregnant

women, produce abortion, has been well illustrated in the communications by Dr. Meadows and Dr. Graily Hewitt. The acceleration of the pulse in railway travelling is one of the indications of the extent to which this form of passive exercise taxes the system; but all physiological deductions require to be received with great reservation, as the disturbing elements are so many and various.

"There are only two classes of persons especially likely to be injuriously affected by moderate railway journeys, even though frequent: they are persons advanced in life and of weakened power, and those who are subject to the special diseases which have already been studied in this relation. The actual exertion, the excitement, the mental strain, the peculiar influences of the motion of a railway carriage, indicate its dangers to those first mentioned. These constitute a small minority. But there are a number of persons who, although not far advanced in age, are yet the subjects of various conditions of ill-health depending on insidious degenerative disease of the brain and heart. The season-ticket holders of the railways are in large numbers men who have passed the best years of their life in hard and exhausting employment of mind and body. They are the successful merchants; the senior partners of flourishing firms, which they have built up by a life of labour; half-retired tradesmen; half-invalid bankers, *et id genus omne*. We can now see that it is by the injuries which have resulted to these men from their constant travelling to and from town that an impression has become current as to certain mischiefs which habitual travelling inflicts. When it is stated that such a banker, who comes up fifty miles three or four times a week, has to lie down half an hour before he can sign a check; that such a well-known chemist has suffered from symptoms of brain excitement since he bought his new house by the sea, and travelled daily to London; or that a certain barrister has found himself obliged to pay for his journey by epileptic seizures, the alarm soon extends beyond reasonable limits. But few men can endure without suffering to travel fifty or a hundred miles daily to their business for any length of time. The influence of the journey itself is heightened by many accessory conditions to which we have adverted; and the present construction of the rails and carriages is such as to deprive the traveller of all those mitigations by which his discomfort might be diminished and his health safe guarded.

"Amongst the unprecedented collection of cases brought under our notice during this inquiry, there have been recorded several of serious mischief, and even death, from persons in ill health hurrying to catch trains and sitting down, heated and breathless, in the draught caused by the moving of the train which they have just managed to be in time for. It is almost exclusively at large termini that these cases have occurred, and that the cause of them obtains. Now, this rushing in at the last moment, we are informed, is becoming more frequent; and consideration of the condition in life of those who constitute the majority of season-ticket holders, would indicate how this evil arises. We believe it would be advantageous to public health and safety, however harsh it may at first appear, that the doors at termini should be closed five minutes previous to the departure of each train, so that sufficient time should be allowed for passengers to quietly settle themselves, and also for the officials, who are often (as one of them graphically expressed it) 'torn to pieces' just at the last moment. It is well known that the difficulties with luggage, which this arrangement would obviate, are frequently causes of delay in starting trains. Then there is high speed to make up lost time, or want of punctuality, both of them fraught with danger to passengers.

"It has been shown that the injurious effects which habitual railway travelling produces on some who escape such influences when only taking occasional journeys are very marked. In such persons, heedless continuance comes to be a cause of disease. In some, there have been no previous symptoms that they could recognize, or such as would have deterred them from undertaking the daily journey; and thus the season ticket is taken, and has soon to be disused. In all cases the evidence points to the conclusion that the injurious influence slowly and gradually increases whilst the cause remains—that tolerance is not established by persistence.

"It is too much the custom, when adopting a country residence on a railway line, to make no arrangements of business according to the diminished time for

work which the daily interval between the morning and evening trains allows. Hence that hurry, anxiety, and working of the brain at high pressure, which, of all things, tends to develop in susceptible persons such injurious effects on health as habitual railway travellers often experience. The remedy for this is obvious: 'Cut your coat according to your cloth'—'Mene tenuis propriā vive'—'Selon le pain il faut le couteau,' are saws proved to be wise. But we believe that no person is justified in undertaking a series of continuous journeys by rail under the conditions alluded to (if under any circumstances), without previously consulting his medical attendant as to their probable effect on his health, the precautions he should adopt, and the warning symptoms which he may not safely disregard."

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

49. *Poisoning with Upas Tieutē.*—Some time since a gentleman of Berlin received from Java some of the arrow-poison, upas tieutē, and fearlessly subjected himself to the action of the poison. He took three grains of the substance, which he found to have a very bitter and slightly saline taste. After having swallowed it, the Doctor felt more cheerful, and a headache which he had had passed off; on the other hand, a feeling of heaviness in the stomach supervened. He soon afterwards left his rooms and went out; and the first sign of the action of the poison having begun, was that on turning round the corner of a street and feeling a strong wind, he perceived a sort of stretching all along the spine. This was half an hour after he had taken the poison. An hour afterwards, on being about to take a cup of coffee, he suddenly felt a violent concussion of the whole body, succeeded by powerful stretchings of all the extremities; at the same time the head was drawn backwards. He endeavoured to speak, but could not open his mouth. This paroxysm soon ceased, but others followed rapidly, either spontaneously or after the slightest stimulus. Consciousness was not in the least disturbed. The fits were not painful, the respiration was not impeded, and the muscles remained quite flaccid after the fits. Swallowing was difficult, and the patient felt very weak. He then desired to be brought to the Charité Hospital, and on being carried down-stairs violent spasms came on; while in the cab which took him to the hospital, he was quite free from them. He was transferred to the clinique of Professor Frerichs, where ipecacuanha and tartar emetic were at once given, as it was supposed that part of the poison might still be in the stomach. Copious vomiting ensued, accompanied by tetanic convulsions, spasm of the glottis and dyspnœa; but the latter ceased with the vomiting. Further convulsive fits followed either spontaneously or on touching the patient's body or the bed, or on suddenly directing a light to the eye. The pulse was 72, and there were no other morbid symptoms. The patient now took ten drops of laudanum every quarter of an hour, and after three such doses, he took fifteen drops every half hour. Having thus altogether taken sixty drops he fell asleep. He perspired freely, and was repeatedly awakened by tension and convulsions of the muscles of the neck and the back; but on taking a few more drops, he soon fell asleep again, and remained so for twelve hours. On awakening the next morning he felt exceedingly weak; there was still some stretching in the muscles of the left side of the neck, but no spasms. The pulse was at 66. Swallowing was still impeded, and the urine passed off with difficulty. This was found to contain strychnia. The laudanum was then discontinued, and the patient merely took wine and easily digestible food. On the third day he was able to leave his bed, and on the sixth his health was quite re-established.

The poison was subjected to examination in the chemical laboratory connected with the hospital. It was contained in a piece of bamboo-cane, and consisted of a coarse-grained reddish-brown substance, in which several shining crystals were seen. On putting some of it under the microscope, amorphous grains and small tetrahedral crystals were discovered. A small trace of this substance gave a strong reaction of strychnia, and it was found that in a hundred parts